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Smartphone Addiction among Nursing Students in Higher Learning Institutions

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ABSTRACT

Smartphone has more advanced computing skill hence making the use of a smartphone possible for varied purposes and objectives. However, the negative side of the smartphone usage is ignored by many people especially among the younger generation. Thus, this study is to provide some information about smartphone addiction among nursing students in a public university. Cross-sectional survey was carried out at Universiti Teknologi MARA (UiTM) Puncak Alam Campus, from December 2018 to January 2019. The questionnaire was distributed to the nursing students to assess their smartphone addiction. A total of 212 questionnaires were distributed during the data collection procedure and out of these 200 questionnaires were completed and returned by the respondents. The total mean of smartphone addiction scale was found to be moderate. The study found that there is a correlation between smartphone addiction with age and Cumulative Grade Point Average. The study concludes that it is important to create awareness on smartphone addiction especially among younger students and students those who have low CGPA scores. Several recommendations were put forward as guidelines to minimize smartphone addiction.

1. INTRODUCTION

Students nowadays continue to increase the amount of time they spend on electronic gadgets. Generally, they are more technology savvy as compared to their peers of yesteryears. Technology is continuously evolving and is always forward-looking. It has improved the way we buy products, the way we live, the way we connect with others, the approach to traveling to other places, and the way we learn. Smartphone is a mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, internet access, and an operating system capable of running downloaded apps (Hornby, 2015). When discussing the mobile phone, the types of mobile phones that were used in forgoing years are no longer in demand. The needs of mobile phone users have changed significantly over the years. The public's demand for mobile phones that are easier to use, with increased functionality has resulted in mobile phone companies developing computer minded smartphones. There are many observable usages of a smartphone such as, for education, business, medical, and social use (Sarwar & Soomro, 2013). These latest smart phones are more user-friendly and are built for multi-purpose usage, unlike their predecessors. The smart mobile phones, with its internet

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capabilities, have resulted in increased dependence on it among users. As long as there is internet connection, smartphone users are able to access the information and entertainment content, as and when required.

Although smartphones have provided many positive features, we cannot neglect the negative influences in these technologies (Abu-Shanab & Haddad, 2015). One of the negative sides of smartphones is addiction. Addiction is the term used to refer to the fact or condition of being dependent to a particular substance or activity (Hornby, 2015). The concept of smartphone addiction was characterized by cyberspace orientated relationship, daily life disturbance, primacy, overuse, positive anticipation, and withdrawal (Ching, Ramachandran, Lim, Sulaiman, Foo & Kee Hoo 2015). The advantage of technological developments overshadowed its downsides in the minds of young people, where many of them did not realize the negative side of using smart phones on behaviour (Abu-Shanab & Haddad, 2015). Recently, smartphone addiction has appeared as a big problem among its users (Kwon, Lee, Won, Park, Min, Hahn & Kim 2013). The frequent habitual checking of the smartphone could lead to addiction (Oulasvirta, Rattenbury & Raita, 2012). Symptoms such as a headache followed by irritability from constant use of the smartphone have reduced concentration especially among students. The frequent messages and calls also result in students being distracted while studying. It would hamper students from finishing their homework or assignment and will severely affect their academic results.

Based on a study conducted in Korea, female students were found to be more susceptible to smartphone addiction (Kim, Min, Min, Lee & Yoo, 2018). It was found that female students mainly used smartphones for messenger services as compared to the males who prefered to use smartphones for web surfing instead. A study conducted among nursing students also found that smartphone addiction was correlated with their interpersonal competence and performance (Lee, Kim, Choi & Yoo, 2018). Currently there is limited research done in relation to the phenomena of smartphone addiction among Malaysian students, particularly nursing students. As such, this paper attempts to provide some insights into smartphone addiction based on the local context. Specifically, this study aims to determine the association between students' characteristics and smartphone addiction among nursing students in the Faculty of Health Sciences, UiTM Selangor, Malaysia.

2. METHODOLOGY

2.1 Sampling and Data Collection

The study employed a quantitative approach to achieve the stated research objective. Based on a cross-sectional study framework, the data collection was conducted in a single period of time from December 2018 to end of January 2019 at the Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Puncak Alam. The respondents of the study comprised of 212 Bachelor of Nursing undergraduates from both full time and part time programmes. They were selected based on the convenience sampling technique. The total nursing students for this programme at UiTM Puncak Alam Campus was approximately 386 students. Based on Krejcie and Morgan (1970) sample size determination guideline, a total of 193 respondents is considered adequate. However, 10 percent of respondents were added from the actual sample size, bringing the total of respondents who participated in this study to 212. This study is ethically approved and permitted by the UiTM Ethics Committee [600-IRMI(5/1/16)].

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2.2 Survey Instrument Development

This study employed the smartphone addiction scale (SAS) that is adopted from the work of Ching, Yee, Ramachandran, Lim, Sulaiman, Foo and Kee Hoo (2015). The scale, comprising 33 items, focusing on smartphone addiction. The constructs measured in the SAS include cyberspace-oriented relationship (seven items), daily life disturbance (six items), primacy (five items), overuse (seven items), positive anticipation (four items), and withdrawal (four items). All these items were measured using 6 point Likert Scale: (1) strongly disagree, (2) for disagree, (3) weakly disagree, (4) weakly agree, (5) agree and (6) strongly agree. The highest score of Likert Scale indicated the highest smartphone addiction (Ching et al., 2015).

2.3 Statistical Analysis

The data was analyzed using the statistical package for the social science (SPSS) version 21 software. Students' characteristics and smartphone addiction scales components were sorted and presented using descriptive statistics. The normality of distributions was assessed using the Kolmogorov-Smirnov test and supported by histogram. The data was not normally distributed, with a p-value of <0.05 for all smartphone addiction scale components. Therefore, non-parametric test such as Mann-Whitney test, Kruskal-Wallis test and Spearman correlation were used to analyse the relationship between the smartphone addiction scale and students' characteristics. The reliability of the smartphone addiction scale is 0.921 that was tested using Cronbach's alpha. It can be described as an excellant result as stated by Montshiwa and Moroke (2014).

3. DATA ANALYSIS AND RESULTS

Table 1 shows the mean and standard deviations of the six different categories of smartphone addiction scale. The total mean of smartphone addiction scale was moderately high (mean=108.34, SD=21.99). Positive anticipation had the highest mean value 4.00 (SD=0.89), while the response to cyberspace-oriented relationship had the lowest mean score of 2.63 (SD=0.87). This implies that the majority of bachelor degree nursing students in this study considered that smartphone provides positive anticipation when used.

Table 1: Mean and Standard Deviation of Smartphone Addiction Scale (by Category) (N=200)

Smartphone Addiction Scale	**Mean**	**SD**
Overall	108.34	21.99
Subscale:		
Positive Anticipation	4.00	0.89
Overuse	3.60	0.91
Daily Life Disturbance	3.55	0.89
Primacy	3.26	0.95
Withdrawal	2.77	0.91
Cyberspace - Oriented Relationship	2.63	0.87

The Mann-Whitney test was used to determine the association between smartphone addiction with gender, residency, program and marital status group. Table 2 shows that there is no statistically significant difference among the variables at (p > 0.05). Next, the Kruskal-Wallis

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test was used to test the association between smartphone addictions with years. Table 3 indicates that there is no statistically significant difference between smartphone addiction and duration of study ($p > 0.05$). Lastly, for continuous data, the Spearman's rank order correlations were used to test the association between smartphone addiction with age and CGPA. The studies showed there is a weak correlation between smartphone addictions with age and CGPA which are statistically significant at $p < 0.05$ (refer to Table 4).

Table 2: The Mann Whitney Test on Smartphone Addiction with Gender, Marital Status, Program, Residency

Variable	**Group**	**N**	**Median(±IQR)**	**Z**	***p*-value**
Gender	Male	18	115.0(38.25)	-1.238	0.216
	Female	182	109.0(25.00)		
Marital status	Single	131	111.0(25.00)	-1.897	0.058
	Married	69	104.0(24.00)		
Program mode	Bachelor of Nursing (Hons) Full time	100	111.0(25.00)	-1.640	0.101
	Bachelor of Nursing (Hons) Part Time	100	104.00(26.00)		
Residency	Town	149	110.00(24.75)	-0.390	0.697
	Village	51	107.31(26.00)		

Note: IQR = Interquartile Range

Table 3: The Kruskal-Wallis Test on Smartphone Addiction Scale and Year of Study

Variable	**Group**	**N**	**Median(±IQR)**	**X(df)**	***p*-value**
Smartphone addiction	Year 1	62	111.00(24.00)	3.000	0.480
	Year 2	26	111.00(26.00)		
	Year 3	59	104.00(31.00)		
	Year 4	53	110.00(25.00)		

Note: IQR = Interquartile Range

Table 4: The Spearman's Test on Smartphone Addiction with Age and CGPA

Item	**Age (r_s, *p*)**	**CGPA (r_s, *p*)**
Smartphone addiction	(-0.179, 0.011*)	(-0.161, 0.022*)

Note: CGPA = Cumulative Grade Point Average, *p<0.05

4. DISCUSSION AND CONCLUSION

The study's primary objective was to determine the association between students' characteristics and smartphone addiction among nursing students at the Faculty of Health Sciences, UiTM, Puncak Alam. Based on the findings, it is indicated that the nursing students are slightly addicted to their smartphones. There is a weak negative correlation between smartphone addiction and age which smartphone addiction, the results indicate a moderately high score. This shows that when age increases the smartphone addiction is more likely to decrease. This findings concurs with the work of Smetaniuk (2014) who found that younger individuals have higher use of the smartphone as compared to older individuals. He added that

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the younger individuals are more likely to show signs and symptoms of smartphone craving. Another study done among Malaysian medical students found that the average age of their sample was 21 years old (Ching et al., 2015). Therefore, it is suggested that those students who started using smartphones at an early age should be given special attention to overcome the addiction. Other than that, the study found a weak negative correlation between smartphone addiction scales with CGPA, indicating that when CGPA is higher, the smartphone addiction will be lesser. Cumulative Grade Point Average (CGPA) is an indicator used to calculate students' academic or grade point achievement. The finding is consistent with a study conducted by Wu et al. (2013) who discovered that individuals who have higher smartphone addiction level are more likely to have lower educational achievement.

The result from this study shows that there is no association between smartphone addiction and gender, marital status, program mode, residency and year of study. The majority of the respondents in this study were female (91.0%) and the remaining nine percent males. This shows that female students form the majority and this is reflective of the existing prevalent local culture perception of the nursing profession being more suitable for the female gender. In contrast, in a previous study involving Malaysian medical students, using the Malay version of Smartphone Addiction Scale, the respondents comprised 43.4 percent males and 56.6 percent females (Ching et al, 2015). Interestingly, a previous study conducted among university students from Iran, established that there was statistical difference between male and female smartphone addiction level, whereby the male students showed higher addiction towards smartphone usage compare to the female respondents (Mazaheri & Najarkolaei, 2014). In contrast, the study from Turkey found smartphone addiction scores were significantly higher in females than males (Zencirci, Aygar, Göktaş, Önsüz, Alaiye & Metintaş, 2018). In terms of marital status, the analysis indicated there was no significant relationship in smartphone addiction between single and married students. Marital status was synonymous with loneliness among the single person as compared to married person. A study that was carried out in Turkey, established there is a relationship between smartphone addiction and social anxiety and loneliness (Enez Darcin et al., 2016).

Interestingly, it was found that smartphone addiction is not significantly associated with program mode (full time and part time). In this study, the researchers tested the association of smartphone addiction with their income, and it showed that the smartphone addiction do not have relation either with the part time students or full time students. A previous study conducted among university students in Chiang Mai, Thailand showed that the highest scores of smartphone addiction were among the low family income (Tangmunkongvorakul et al., 2019). The result also found that there was no significant differences between smartphone addiction and residency status of the students. Malaysian Communications and Multimedia Commission (2015) reported that residency status, smartphone usage and income are related to each other. Moreover, the report highlighted that the monthly household income for Malaysians in the urban area is higher as compared to the rural area. It further stated that there is no difference in smartphone addiction scales among students in Year-1, Year-2, Year-3 and Year-4. It shows that there is no difference in smartphone addiction between junior and senior students in the university.

This study concludes that the smartphone addiction among nursing students is moderately high. The relationship between the smartphone addiction scale and selected students' characteristics was also investigated. Overall, apart from age and grade, smartphone addiction

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scale is not likely to be influenced by the remaining students' characteristics. Therefore, it is suggested that further research is to be carried out at a larger scale to determine the relationship among the selected students' characteristics and smartphone addiction. Nevertheless, the study serves as a valuable source of reference for the relevant parties to take proactice actions. In particualar, the ministry of education should develop a program to assist students who have problem with smartphone addiction. The higher learning institutions can cooperate with the relevant government agencies to create awareness about smartphone addiction. Also, parents should be included in such education program because they are an important part of the students' support system.

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